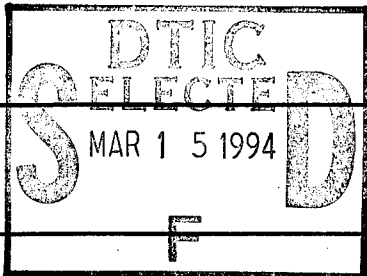


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| 6. AUTHOR(S) Dr James H. Hageman | | | | |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Dept of Chemistry and Biochemistry New Mexico State Univ Box 30001, Dept 3C Las Cruces NM 88003-0001 | | | 8. PERFORMING ORGANIZATION REPORT NUMBER AFOSR-TR-93-0095 | |
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| 13. ABSTRACT (Maximum 200 words) With the funds awarded from DOD-AFOSR and matching funds from New Mexico State a new Varian Gemini 200 MHz nmr was purchased and installed in the spring of 1994. This instrument is capable of 1H and 13C nmr, is very sensitive, and can also do Hetcor experiments to facilitate proton assignments. It is very easy to use and has proven thus far to be extremely reliable. The change in the research output in the department has been significant. Whereas previously students had to sometimes wait days to run routine nmr spectra because our high field instrument was otherwise occupied with longer experiments, now they can run spectra immediately (or with minimal wait). This speeds up structure assignments, and gives students instant gratification when experiments succeed and rapid feedback when they are not successful. | | | | |
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Marilyn J. McKee
Department of the Air Force
Air Force Office of Scientific Research/ PKA
110 Duncan Avenue Suite B115
Bolling AFB, DC 20332-0001

Dear Ms. McKee:

This will constitute the Final Technical Report for a grant from the AFOSR of \$100,000 (F49620-93-1-0582) for the purchase of a 200 MHz nmr spectrometer which started September 30, 1993. This grant was awarded to ameliorate a drastic situation in our department due to the age and reliability (or rather unreliability) of our routine nmr instrument. With the funds awarded from DOD-AFOSR and matching funds from New Mexico State a new Varian Gemini 200 MHz nmr was purchased and installed in the spring of 1994. This instrument is capable of ^1H and ^{13}C nmr, is very sensitive, and can also do Hetcor experiments to facilitate proton assignments. It is very easy to use and has proven thus far to be extremely reliable. The change in the research output in the department has been significant. Whereas previously students had to sometimes wait days to run routine nmr spectra because our high field instrument was otherwise occupied with longer experiments, now they can run spectra immediately (or with minimal wait). This speeds up structure assignments, and gives students instant gratification when experiments succeed and rapid feedback when they are not successful.

As indicated in our proposal, we have instituted a check out system in which student operators are trained and then must be checked out by the Departmental Instrumentation staff (Mr. Monte Mauldin or Prof. Walter Lwowski) before they are permitted to operate the spectrometer without supervision. At present about 30 students, undergraduates, graduates, and postdocs, are checked out. This system has worked wonderfully and we have had very good performance and reliability because students learn what the instrument is capable of doing and take the responsibility to report problems early on. As a consequence we have experienced no major problems and minor ones can be corrected before they become major.

Our departmental usage of this instrument is very high as it is in nearly continual use throughout the day and evening. An encouraging fact is that many of our undergraduate users are doing research under one of the many research programs for minority students that are operative here at NMSU (MARC, MBRS, SEED, etc.). It is very important to provide a quality and supportive educational experience for these students, and access to modern equipment is part of that experience. In addition our new faculty have benefited greatly in establishing their research programs because of the readily available instrument.

In summary, the acquisition of a new 200 MHz nmr spectrometer with funds provided by the DOD-AFOSR has been a crucial step in improving the research capabilities of this department, and has provided a significant boost in productivity and morale. For this we are extremely grateful. Thank you!

Sincerely,

James H. Hageman
James H. Hageman
Professor and Head

cc: Dr. Charles Lee

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January 11, 1994

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